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The e-government information model based on GPR

Zhigang Li [a], Fengyue Yang [a]*

[a]*College of Management Science, Chengdu University of Technology, Chengdu 610059, P.R.China*

Abstract

Government business process reengineering is the basis and prerequisite for the implementation of e-government, business process reengineering will largely influence the potential of e-government information technology, and the effect of E-government in the reform of government management mode. This paper from the relationship between e-government and government business process reengineering based on the effective use of information technology and information resources as the goal, to clarify the e-government and government business process reengineering are interactive, complementary and mutually reinforcing. And then from the point of view of e-government information system implementation, the e-government information system model based on government business process reengineering is put forward, and the current government information model and e-government information model are compared.

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Keywords: e-government; GPR; information technology; information model

1. Introduction

From the perspective of the development of government information technology, the application of information technology improved the efficiency in government business in the 1980s, but had not given full play to the potential of information technology. The reason is that there is no restructuring, normalization and optimization of the working process of the government. In the mid-1990s, many governments in developed countries put forward the concepts and methods of the Government Process Reengineering (GPR) by use of the Business Process Reengineering (BPR) theory, to analysis and redesign the workflow and process in the organization and between the organizations. During the course of government business process transformation and organization restructuring, to minimize or even eliminate the non-value added activities, government departments abolish many of the traditional middle management, compress, simplify and integrate a variety of

* Corresponding author. Tel.: +86-136-8817-6207.
*E-mail address:*f547705236@163.com, lizhigang@mail.cdut.edu.cn.

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business processes, reduce job classification, cultivate "multi-skill" workers, making the government's management efficiency has been significantly improved [1].

Currently, the world appeared a tendency in the process of e-government development, the E-government business and operational structure lags behind the requirements of the E-government system construction. The fundamental reason cause these problem is the misconception that e-government is the traditional government affairs intact moved to the Internet, and does not require a reorganization of the fundamental transformation and business process reengineering of the traditional organizational structure [2]. Mistakenly believe that e-government is the traditional government mapped in the digital world. Many countries' E-government system engineering practices in the world prove that the result can only make a computerized business flow of government information island under the guiding ideology, it is impossible to achieve the goal of seamless integration and information sharing. Visible, to solve this problem, must put the development of E-government system and government process reengineering in parallel at the same time, to a whole new kind of method and procedure to achieve the original business and government guidance function.

2. Interaction between GPR and e-government

E-government process is a group of related, structured activities, or a series of chain of events. These activities sets or chains provide a specific service or product for specific publics, this process has a beginning, an end, and a purpose. Government Process Reengineering (GPR) is a large-scale reform of the government's governance philosophy, principle, structure, behavior, in order to improve government performance and service quality, it is not a simple organizational streamlining and restructuring [3]. GPR is to a certain political environment, the E-government process review and rethinking, through to clean up and simplify the process for the original and integration, in order to significantly improve the level of government jobs. Government Process Reengineering is under certain political environment, to examine and re-think government processes by cleaning up, simplifying and integrating the original process in order to achieve a significant increase in the level of government jobs.

Electronics and government, the government is more critical, the electronics is a tool. The government is involved in the reform problem, on the one hand is the management, on the one hand is the service, if these two goals cannot be reached, the real e-government cannot be achieved [4]. E-government administrative process sets to improve performance management and public satisfaction as the goal, it has three basic characteristics: one is for the public, with business as a center; the second is the existing boundaries across functional departments and their subordinate units; the third is facing the process of system program management to replace the traditional government management entities. In the construction of e-government, if the business process is seriously lagging behind or the application needs have a large difference between the established platforms of the government, it hindered the construction of electronic government. Therefore, when the government departments are in the construction of e-government, GPR is very important [5]. E-government requires the functional departments of the government organs to break the inherent mode, for the same business coordination office, which requires government process according to the inherent mechanism of e-government operation to recycle purposefully and organically. First, government departments should be in accordance with the urgency of priority order of GPR, in this way, an E-government Architecture will emerge. Those businesses that do not have any effect after GPR are government functions that should to be transformed, and those that have been removed after the government process reengineering are government agencies which should to be adjusted.

Government process reengineering is in order to make full use of the characteristics of electronic government. The existing government business department is set up according to function, such as finance, planning, industry and commerce, taxation and so on. The handling of official business is also should the parties to bid for each department one by one, and government departments are accustomed to such a set of

standardized administrative mode. And e-government requires service-center, "one-stop" service, which requires government process reengineering, to improve government transparency, standardization, real-time, all-weather operation of government agencies to promote efficient, interactive and probity [5]. Government process reengineering is the self-transformation and innovation of the government to adapt to and the use of modern information technology to improve government efficiency, and is the basis for the implementation of e-government. E-government developed continuously with the government management system innovation and technological innovation, the optimization of the government process cannot once and for all, but a deepening, ever-changing, constantly reengineering process. The relationship between e-government development and government process reengineering is shown in Figure 1.

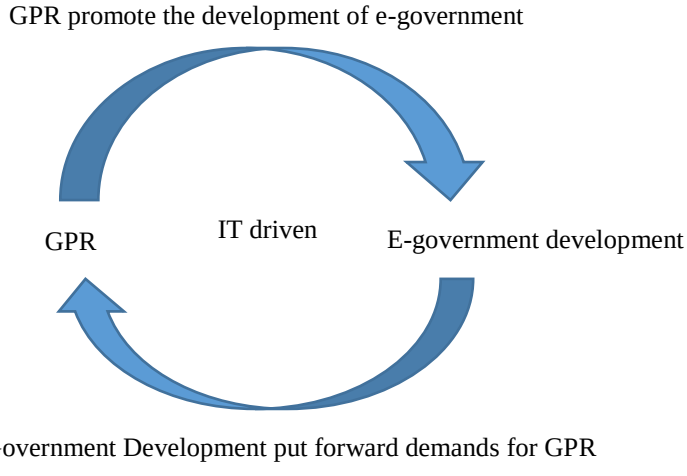

Figure 1. Interactive relationship between E-government and GPR

In summary, development of e-government and government process reengineering is complement each other, government process reengineering requires to accelerate the construction of e-government system, and the effective use of information technology and information resources also requires government process reengineering. From the perspective of government informatization, the government process reengineering is the organizational guarantee of e-government.

3. Construction process of e-government information model based on GPR

Because BPR and GPR are the reengineering of the business process, so business process optimization principle, optimization method, and the optimization means are interlinked, business process analysis thinking is similar and can learn from each other. The premise of GPR and Business Process Reengineering is to analyze the influence of development of information technology for business process, restructuring and renovation of the process, rather than the use of information technology to deal with the existing business processes, that is "a superficial reform". In traditional business processes, the same information are often should be carried out in different sectors of the storage, processing and management, which contains a lot of repetitive work. Through the business process reengineering, each process should be determined to gather information, then capture information at the source, and use information technology to realize information sharing in the whole process.

Development of E-government is not only a change of government working way, working efficiency and running cost, but government business process reengineering and organization restructuring, etc. During the

implementation of e-government project, we cannot simply move existing business, office, procedures wholly onto computer, but the traditional working mode, working methods, and working means need a thorough reform. E-government, regarded as an important part of the national informatization, will promote and force governments to review the existing old system, looking for a new system to reduce the intervention, promoting the reform of information market.

GPR requires a radical transformation of the traditional planned economic system formed during the administrative process, to make the government more conform to the e-government management and government services "simple, transparent and efficient" objective requirement. This requires the establishment of unified government department's job specification; to deepen the reform of the current administrative examination and approval system; to formulate the specific implementation of "open government" measures, in order to improve the transparency of government management.

First of all, the implementation of e-government is helpful to the role of the government and the management idea change, the establishment of a public demand-driven and service-oriented government. Through e-government, government services will be more convenient and faster, to the public opinion and the requirements of the reaction speed is greatly improved. It can be said that the implementation of e-government can strengthen the role as servicer and the concept of service-oriented government, effectively enhance the government's public servant consciousness, providing better services for taxpayers. The implementation of e-government is helpful to establish a "customer-centric" management model [6]. The traditional government model is taking the government as the center, and the implementation of e-government will establish a "customer" as the center of the management model, namely the customer as the center, the customer's demand as the starting point, the enterprise and the public as a customer management and service. Now, through the establishment of a customer-centric government portal website, the development of a "one-stop" service management model has become the experience and consensus of countries all over the world to carry out E-government. Public just use the mouse to click the government portal website, can enjoy the government more concrete, more personalized service. Secondly, the implementation of e-government helps to improve the speed and efficiency of the information transmission, optimize the organizational structure of the administration, enhance the efficiency of government communication and administrative operational efficiency, simplify administrative operational procedures, and reduce administrative operating costs, thereby saving the government funding and expenditure. The implementation of e-government will help promote openness and information disclosure, enhance transparency of government work. By implementing e-government, government information and government business process can be dealt with the public, which can strengthen the supervision of the government administrative process and reduce the traditional government affairs black-box operation, make government affairs public, transparent, reduce or minimize the chance of corruption. Finally, the implementation of e-government can help improve the bounded rationality of government decision-makers, to promote government decision-making more scientific and democratic. The implementation of the e-government, through database construction and computer decision support system under the network environment , makes the government before making decisions, can widely understand all kinds of information needed for the decision, avoid relying on the experience of decision-making and decision-making with incomplete information leads to the blind decision-making and decision-making mistakes, and promote the scientific government decision-making. In addition, the use of information technology has promoted the scientization and democratization of the government decision-making. The knowledge and information of the Internet age has the characteristics of dispersion, and to determine the dispersion of the authority. In government decisions, everyone can participate in decision-making, think-tanks and experts' opinions also can get a timely response, and the public can also be free to express their opinions and demands through the Internet, which greatly promote the democratization of government decision-making, so that the government can take full advantage of most people's ingenuity to make scientific decision.

Thus it can be seen, the implementation of e-government, is a powerful government reengineering measure, through the implementation of e-government, better, faster to achieve the main goal of government reform. Therefore, the development of e-government can promote the government process reengineering. Moreover, government process reengineering requests to speed up the construction of e-government system, and the effective use of information technology and information resources also asked for the government process reengineering. Therefore, it can be said the development of e-government and government process reengineering is complement each other. From the perspective of government informatization, the government process reengineering is the organizational guarantee of e-government.

Government process reengineering should be phased continuous improvement, constantly promoted, it is a process of spiral rising cycle. A lot of books and periodicals have introduced implementation method, but mostly limited to the idea of GPR and conceptual introduction, even if the method of carrying out GPR involved in a few articles is not systematic. There especially is lack of rational and effective judgment method of GPR. Here, according to the problems in the combination of GPR and IT (Information Technology), the following methods can be used to implement the GPR (Figure 2).

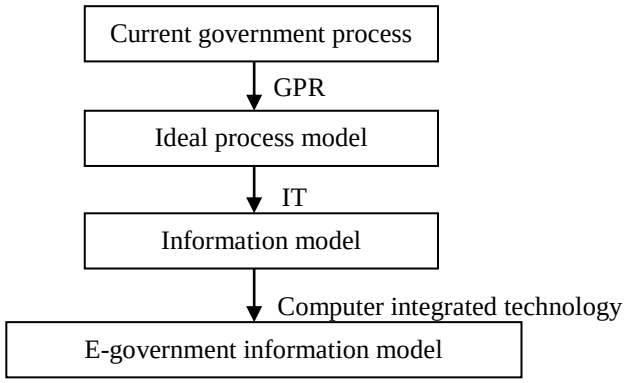

Figure 2. Construction process of e-government information model based on IT combined with GPR

First, according to the current government's environment and the specific situation of the old process, determine the key business which is ready to change and the critical process which needs reengineering, define the scope of reengineering and quantification, blend in advanced and the most suitable for their own management idea to build a good organizational structure, rules and regulations, performance indicators and the post responsibility and other business framework.

Second, establish the ideal model of the process. According to the existing framework, understand the development trend of e-government and look for best practices, realize thinking innovation and technological innovation, drawing on the successful experience of other countries, regional government and absorb the merits of different models, design 3-5 business process models, formed ideal model after screening.

Third, re-design the organizational structure model and government process to adapt the ideal government process model, define the technology requirements, carries on the return on investment and the cost/benefit analysis, and evaluation of the impact of citizen, determine implementation method and the project schedule plan, etc.

Forth, select the platform able to support the new process, that is a good set of e-government system to function with the new government process to match, it can meet the government's management structures and processes, complete all administrative tasks, it can meet the government's management structure and process, complete all administrative tasks, and constantly change with rapidly changing environmental, to achieve sustainable development ,which is of particular importance in the implementation of service-centric strategy.

Fifth, according to the existing model of GPR and IT, we will construct a corresponding model of government affairs management information system, formulate reasonable implementation plan, and then use computer technology to realize integration, ultimately form a complete computer business information system. In a future, in the government affairs process, rely on the system to manage the whole government.

To sum up, implementing GPR from the perspective of e-government process efficiency and IT, can optimize well or to reconstruct a scientific and efficient government business process, so that it can be based on advanced management mode, give full play to the potential of the computer to manage the business of government well.

4. Comparison of current government information model and e-government information model

Construction of e-government information model is the government according to the inherent mechanism of e-government operation principle, in order to improve the service object of public service satisfaction, to the administrative functions of the current business process reengineering, to better meet the demand for public service type and quality of service object. What are the main differences between the current government and e-government? Government information is generally reflected in the form of data, in the current government, usually through all kinds of files, documents, books, reports, and technical documentation and other forms of out, these forms called information carrier, distributed in different government departments, information exchange between departments mainly through the carrier transmission. The disadvantages of these are: the form of expression is different, the format is complex, the information lacks the uniqueness and the consistency, the information flow channel is not smooth, etc. In the e-government information model, the information is in form of digit symbol and centralized storages in the database, information organization, storage structure and handling methods occurred fundamental changes, exchange of information within the government at all levels and in all departments mainly through online access shared database. The differences between the e-government information model and the current government information model are shown in Table 1.

Table 1. Comparison between the e-government information model and the current government information model

	The current government information model	The e-government information model
Information format	The form of expression is different, complex format, unified	The information format shows good consistency in digital format
information exchange	Through the transfer of information carrier	Online access shared database
information sharing	Departments lack coordination, information is hard to obtain	Centralized or distributed in shared database, information resource sharing
Information authenticity	By human interference, easy to cause the information distortion	Through the service flow to ensure the reliability of the information source, to achieve the authenticity of the information content
Information accuracy	Information content is not standardized, arbitrary	Using source control, accuracy requirements and automatic inspection to ensure that the information is correct and consistent
Information integration	There is information duplication	Information is strictly integrated and unique
information transfer	The channel is not smooth, links, slow	Real-time data acquisition, automatic data processing, information transfer and processing in time
Information availability	Poor information availability	Good information availability

Information security	Poor security	Use security mechanisms to prevent information theft and denial, security and confidentiality

5. The conclusion and the enlightenment

Only when E-government information model's each part of the key business has achieved digital, networked, and carried out GPR, can it achieve a truly e-government. The conclusions and implications of this study are as follows:

(1) To construct the e-government system, reengineering the government business process is a must.

Although business process reengineering comes from the business world, its core management concepts and management methods used are equally applicable to government departments. Its center is to transform the government business process with the spirit of the entrepreneur. To enable the government to shift from control -oriented management to service-oriented management.

(2) Pay attention to the development of information technology's impact on the business process.

Because BPR and GPR are the reengineering of the business process, business process optimization principle, optimization method, optimization means are interlinked, and business process analysis way of thinking is similar, can learn from each other. Through the business process reengineering, each process should be determined to gather information, and then capture information at the source, and use information technology to realize information sharing in the whole process. And the use of information technology can promote the government decision-making more scientific and democratic.

(3) The development of e-government and government process reengineering are complementary to each other.

To sum up, the implementation of e-government cannot simply be existing business, office, procedures wholly intact moved to the Internet, but the innovation of traditional work mode, work method, work means. Government process reengineering request to speed up the construction of e-government system, and the effective use of information technology and information resources also requires government process reengineering, the two complement each other. From the perspective of government informatization, government process reengineering is the organizational guarantee of the e-government.

(4) The demand of e-government information system is the direction and goal of the government process reengineering.

To develop e-government, we must change the traditional administrative idea, rethink the functions of the government, redesign the government's organizational structure, culture, and work process, on the basis of the construction of e-government. The development of e-government pointed out the direction for the government process reengineering, and put forward a clear direction to e-government information system in speed, quality, service and other aspects.

(5) Government process reengineering is the self-transformation and innovation of the government to adapt and use modern information technology to improve the efficiency of the government affairs implementation.

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